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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/381,588	09/20/1999	STEVEN JAMES SHATTIL	022950PCTUS	4149

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07/19/2004

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EXAMINER

BURD, KEVIN MICHAEL

ART UNIT	PAPER NUMBER
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2631

17

DATE MAILED: 07/19/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/381,588

Applicant(s)

SHATTIL, STEVEN JAMES

Examiner

Kevin M Burd

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 April 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 44-136 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 90-95, 100, 110, 118-120, 125 and 135 is/are allowed.
- 6) ☒ Claim(s) 44-89, 96-99, 101-109, 111-117, 121-124, 126-134 and 136 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: _____

1. This office action, in response to the remarks filed 4/28/2004, is a non-final office action.

Response to Arguments

2. Applicant's arguments, see pages 2-4, filed 10/28/2003, with respect to the rejections of claims 82, 87, 88, 93-100, 104-106, 110, 111, 119-126, 129-131, 135, 136 under 35 USC 102(b), 35 USC 102 (e) and 103(a) have been fully considered and are persuasive. Therefore, the rejections have been withdrawn. However, upon further consideration, new grounds of rejection are made in view of the prior art disclosed in the following paragraphs.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 44-47, 50-76, 80-87, 89, 96-99, 101-109, 111-117, 121-124, 126-134 and 136 are rejected under 35 U.S.C. 102(b) as being anticipated by Tomisato et al (US 5,504,783).

Regarding claims 44, 46, 47, 50-56, 59-61, 104-109 and 111, Tomisato discloses a method of transmitting a communication signal comprising a plurality of carrier signals

having a plurality of frequencies and modulating the carrier signals with at least on information signals (figure 8 and column 8, lines 38-64). The carriers are different and each having a phase offset (figure 2) and produce pulses is that are "substantially orthogonal in time" (figure 12(a) - 12(d)). The modulated signals are combined in 74 of figure 8 and transmitted.

Regarding claim 45, numerous transmissions will occur and each transmission will have the components shown in figure 8.

Regarding claims 62-66, 82-86, 96, 97 and 101, Tomisato discloses a method of receiving a communication signal comprising a plurality of carrier signals having a plurality of frequencies and modulating the carrier signals with at least on information signals (figure 16 and column 15, lines 55-60). The carriers are different and each having a phase offset (figure 2) and produce pulses is that are "substantially orthogonal in time" (figure 12(a) - 12(d)). The received signals are combined as shown in figure 20.

Regarding claims 67-75, 80, 81, 89, 102 and 103, Tomisato discloses a method of transmitting a communication signal comprising a plurality of carrier signals having a plurality of frequencies and modulating the carrier signals with at least on information signals (figure 8 and column 8, lines 38-64). The carriers are different and each having a phase offset (figure 2) and produce pulses is that are "substantially orthogonal in time" (figure 12(a) - 12(d)). The modulated signals are combined in 74 of figure 8 and transmitted. Tomisato discloses a method of receiving a communication signal comprising a plurality of carrier signals having a plurality of frequencies and modulating the carrier signals with at least on information signals (figure 16 and column 15, lines

55-60). The carriers are different and each having a phase offset (figure 2) and produce pulses is that are "substantially orthogonal in time" (figure 12(a) - 12(d)). The received signals are combined as shown in figure 20.

Regarding claim 76, the transmitter of figure 8 reduces sidelobes (column 8, lines 38-48).

Regarding claim 87, figure 20 discloses the receiver's system for weighting the received signals.

Regarding claims 98 and 99, Tomisato discloses a method of receiving a communication signal comprising a plurality of carrier signals having a plurality of frequencies and modulating the carrier signals with at least one information signal (figure 16 and column 15, lines 55-60). The received signals are input to the filters 253. The carriers are different and each having a phase offset (figure 2) and produce pulses is that are "substantially orthogonal in time" (figure 12(a) - 12(d)). The received signals are combined as shown in figure 20. A decision device 86 is coupled to the combiner 85.

Regarding claims 57, 58, 112-117, 121-124, 126-134 and 136, the carriers are provided for frequency hopping (column 8, lines 38-47).

4. Claim 88 is rejected under 35 U.S.C. 103(a) as being unpatentable over Tomisato et al (US 5,504,783) in view of Odenwalder (US 2002/0009096).

Regarding claims 88, Tomisato discloses a receiver having a receiving element for receiving a plurality of carrier signals as stated in paragraph 3. Tomisato does not

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disclose the use of adjusting the gain of the receiver to compensate for fading.

Odenwalder discloses adjusting the gain of the receiving system (paragraph 0041).

Odenwalder states, in paragraph 0040, it is advantageous to adjust the gain to increase the high transmission capability and to allow the transmission to adapt to changing radio channel conditions. For these reasons, it would have been obvious for one of ordinary skill in the art at the time of the invention to utilize the adaptive gain adjustments of Odenwalder in the receiver of Tomisato.

Allowable Subject Matter

5. Claims 90-95, 100, 110, 118-120, 125 and 135 allowed.
6. The indicated allowability of claims 44-81, 83-86, 92, 102, 103, 107-109, 112-117, 127, 128 and 132-134 is withdrawn in view of the newly discovered references discussed above.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Jenkin et al (US 6088,351) in figure 16 and Tzannes et al (US 6,252,909) in figures 4 and 5, disclose multi-carrier transmitters and receivers that combine numerous carrier signals before transmission.

Contact Information

Any response to this action should be mailed to:

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Commissioner of Patents and Trademarks
Washington, D.C. 20231

or faxed to:

(703) 872-9314, (for formal communications intended for entry or for informal or draft communications, please label "PROPOSED" or "DRAFT")

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA, Sixth Floor (Receptionist).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kevin Burd, whose telephone number is (703) 308-7034. The Examiner can normally be reached on Monday-Thursday from 9:00 AM - 6:00 PM.

Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 305-3800.



Kevin M. Burd
PATENT EXAMINER
7/10/2004